

### ABSTRACT OF THE DISCLOSURE

A seismic sensor, has a case, a pre-charged, non-conductive membrane located between two plates that form a capacitor and accommodated inside the case, with one of the plates being immovable relative to the case and the other of the plates being movable relative to the one plate under the action of seismic activity of a medium in which the sensor is located, so that the capacitor produces an electrical signal responsive to the seismic activity, and a mass increasing element associated with the movable plate so as to increase mass of the movable plate and therefore enhance oscillations of the movable plate under the action of the seismic activity.